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PTO/SB/21 (04-04)

TRANSMITTAL FORM <small>(to be used for all correspondence after initial filing)</small>	Application Number	10/602,537
	Filing Date	June 23, 2003
	First Named Inventor	Tang, Hongxing
	Art Unit	2811
	Examiner Name	not yet assigned
Total Number of Pages in This Submission	Attorney Docket Number	009195-000410US

ENCLOSURES (Check all that apply)				
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input checked="" type="checkbox"/> Power of Attorney or Authorization of Agent (2) <input checked="" type="checkbox"/> Statement Under 3.73(b) with copy of recorded Assignment (2) <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Technology Center (TC) <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return Postcard		
<table border="1"><tr><td>Remarks</td><td>The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.</td></tr></table>			Remarks	The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.
Remarks	The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.			

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Townsend and Townsend and Crew LLP Gerald T. Gray Reg. No. 41,797
Signature	<i>Gerald T. Gray</i>
Date	October 20, 2004

CERTIFICATE OF TRANSMISSION/MAILING			
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Typed or printed name	Sylvia E. Arnold		
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POWER OF ATTORNEY OR AUTHORIZATION OF AGENT	Application Number	10/602,537
	Filing Date	June 23, 2003
	First Named Inventor	Hongxing Tang et al.
	Title	GIANT PLANAR HALL EFFECT IN EPITAXIAL FERROMAGNETIC SEMICONDUCTOR DEVICES
	Art Unit	2822
	Examiner Name	Unassigned
	Attorney Docket Number	009195-000410US

I hereby appoint:

☒ Practitioners at Customer Number

20350

OR

☐ Practitioner(s) named below:

Name	Registration Number

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

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☒ The above-mentioned Customer Number.

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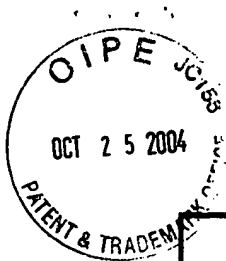
I am the:

☐ Applicant/Inventor.☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).**SIGNATURE of Applicant or Assignee of Record**

Name	Linda S. Stevenson, Manager of Patent Prosecution		
Signature			
Date	09/14/04	Telephone	(510) 587-6000
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.			
<input type="checkbox"/> *Total of _____ forms are submitted.			

This collection of information is required by 37 CFR 1.31 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**STATEMENT UNDER 37 CFR 3.73(b)**Applicant/Patent Owner: Hongxing Tang, Michael L. Roukes, Roland K. Kawakami and David D. AwschalomApplication No./Patent No.: 10/602,537Filed/Issue Date: June 23, 2003Entitled: GIANT PLANAR HALL EFFECT IN EPITAXIAL FERROMAGNETIC SEMICONDUCTOR DEVICESThe Regents of the University of California, a University

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☐ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.
The extent (by, percentage) of its ownership interest is _____ %

in the patent application/patent identified above by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

OR

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

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- ☐ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.8]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

09/14/04
Date(510) 587-6000

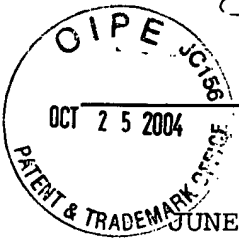
Telephone number

Linda S. Stevenson

Typed or printed name

Linda S. Stevenson
SignatureManager, Patent Prosecution

Title



6TG, WC



102195-000410US

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUNE 07, 2004

PTAS

TOWNSEND AND TOWNSEND AND CREW LLP
GERALD T. GRAY
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834



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RECORDATION DATE: 11/17/2003

REEL/FRAME: 014695/0947
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: 009195-000410US

ASSIGNOR:

KAWAKAMI, ROLAND K.

DOC DATE: 11/02/2003

ASSIGNOR:

AWSCHALOM, DAVID D.

DOC DATE: 11/12/2003

ASSIGNEE:

CALIFORNIA, UNIVERSITY OF THE
REGENTS OF THE
1111 FRANKLIN STREET, 12TH FLOOR
OAKLAND, CALIFORNIA 94607-5200

SERIAL NUMBER: 10602537

FILING DATE: 06/23/2003

PATENT NUMBER:

ISSUE DATE:

TITLE: GIANT PLANAR HALL EFFECT IN EPITAXIAL FERROMAGNETIC SEMICONDUCTOR DEVICES

J2E

06/15/04

014695/0947 PAGE 2

THERESA FREDERICK, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

11-19-2003

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(Rev. 10-02)

OMB No. 0651-0027 (exp. 5/31/2002)



heet

U.S. Department of Commerce
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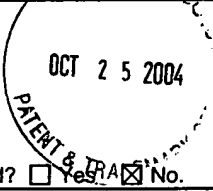
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102604523

To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof

1. Name of conveying party(ies):

Roland K. Kawakami
David D. Awschalom



2. Name and address of receiving party(ies)

Name: The Regents of the University of California

Internal Address:

Street Address: 1111 Franklin Street, 12th Floor

City: Oakland

State: CA

ZIP: 94607-5200

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No.

3. Nature of conveyance:

☒ Assignment

☐ Merger

☐ Security Agreement

☐ Change of Name

☐ Other:

Additional name(s) and address(es) attached? ☐ Yes ☒ No

Execution Date: 11/02/03 and 11/12/03

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No(s): 10/602,537

B. Patent No(s):

Additional numbers attached? ☐ Yes ☒ No

203 NOV 17 AM 7:00 OPR/FINANCE

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Gerald T. Gray
TOWNSEND AND TOWNSEND AND CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
(415) 576-0200

6. Total number of applications and patents involved 1

7. Total fee (37 CFR 3.41): -----\$40.00

☐ Enclosed

☒ Authorized to be charged to deposit account

8. Deposit account number: 20-1430

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Gerald T. Gray

Name of Person Signing

Atty. Reg. No. 41,797

Gerald T. Gray
Signature

November 12, 2003

Date

Total number of pages including cover sheet, attachments and documents: 4

Mail documents to be recorded with required cover sheet information to:

Mail Stop Assignment Recordation Services
Director of the U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

11/18/2003 LUELLER 00000063 201430

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40.00 DA

ASSIGNMENTU.C. Case No. CIT-3713

For good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR(S),

1. Roland K. Kawakami 2. David D. Awschalom

hereby sells, assigns and transfers to ASSIGNEE, The Regents of the University of California, a California Corporation, having its statewide administrative offices located 1111 Franklin St., 12th Floor, Oakland, CA 94607-5200, and the successors, assigns and legal representatives of the ASSIGNEE all of its right, title and interest for the United States and its territorial possessions and in all foreign countries in and to, any and all improvements which are disclosed in the invention entitled:

GIANT PLANAR HALL EFFECT IN EPITAXIAL FERROMAGNETIC SEMICONDUCTOR DEVICES

and which is found in

- (a) _____ U.S. provisional application filed herewith and listing the above-named persons as inventors
 (b) _____ U.S. patent application filed herewith and listing the above-named persons as inventors
 (c) X _____ U.S. application serial no. 10/602,537, filed on June 23, 2003
 (d) _____ U.S. Patent No.: _____, issued _____

and any legal equivalent thereof in a foreign country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, continuation-in-part, extension, conversion to 35 USC 111(a) or substitute thereof, and any reissue, reexamination or extension of said Letters Patent and all rights under all International Conventions for the Protection of Industrial Property;

ASSIGNOR(S) hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;

ASSIGNOR(S) further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation, or proceeding relating thereto and will promptly execute and deliver to ASSIGNEE or its legal representative any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue or enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof. An attorney of record is authorized and requested by the execution of this assignment to insert into this assignment the filing date and serial number of said application when officially known.

AND the ASSIGNOR(S) requests the Commissioner of Patents and Trademarks to issue said Letters Patent of the United States and any reissue or extension thereof to the ASSIGNEE, The Regents of the University of California.

executed this

Signature of Inventor(s)

1. 2 day of November, 2003


2. _____ day of _____, 2003

TTC Attorney Docket No. 023070-1393-00USASSIGNMENTU.C. Case No. CIT-3713

For good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR(S),

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and any legal equivalent thereof in a foreign country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, continuation-in-part, extension, conversion to 35 USC 111(a) or substitute thereof, and any reissue, reexamination or extension of said Letters Patent and all rights under all International Conventions for the Protection of Industrial Property;

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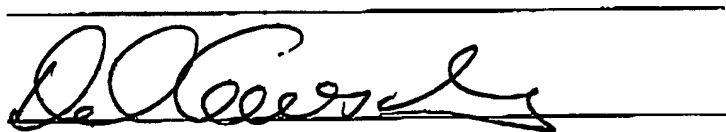
ASSIGNOR(S) further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation, or proceeding relating thereto and will promptly execute and deliver to ASSIGNEE or its legal representative any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue or enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof. An attorney of record is authorized and requested by the execution of this assignment to insert into this assignment the filing date and serial number of said application when officially known.

AND the ASSIGNOR(S) requests the Commissioner of Patents and Trademarks to issue said Letters Patent of the United States and any reissue or extension thereof to the ASSIGNEE, The Regents of the University of California.

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Signature of Inventor(s)

1. _____ day of _____, 2003

2. 12 day of Nov., 2003



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POWER OF ATTORNEY OR AUTHORIZATION OF AGENT	Application Number	10/602,537
	Filing Date	June 23, 2003
	First Named Inventor	Hongxing Tang et al.
	Title	GIANT PLANAR HALL EFFECT IN EPITAXIAL FERROMAGNETIC SEMICONDUCTOR DEVICES
	Art Unit	2822
	Examiner Name	Unassigned
	Attorney Docket Number	009195-000410US

I hereby appoint:

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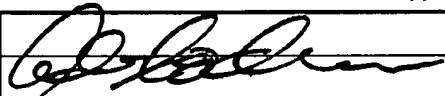
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I am the:

☐ Applicant/Inventor.☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).**SIGNATURE of Applicant or Assignee of Record**

Name	Adam Cochran		
Signature	 The Intellectual Property Counsel		
Date	SEP -2 2004	Telephone	626-395-4567
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.			
<input type="checkbox"/> *Total of _____ forms are submitted.			

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**STATEMENT UNDER 37 CFR 3.73(b)**Applicant/Patent Owner: Hongxing Tang, Michael L. Roukes, Roland K. Kawakami and David D. AwschalomApplication No./Patent No.: 10/602,537Filed/Issue Date: June 23, 2003Entitled: GIANT PLANAR HALL EFFECT IN EPITAXIAL FERROMAGNETIC SEMICONDUCTOR DEVICESCalifornia Institute of Technology, a University

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☐ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.
The extent (by, percentage) of its ownership interest is _____%

in the patent application/patent identified above by virtue of either:

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- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

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- ☐ Copies of assignments or other documents in the chain of title are attached.

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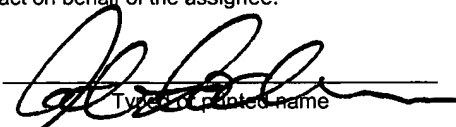
The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

SEP - 2 2004

Date

626-395-4567

Telephone number

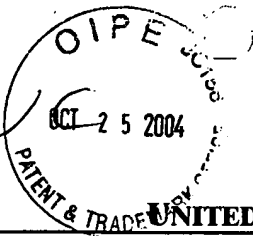

Typed or printed name

Signature

Adam Cochran**The Intellectual Property Counsel**

Title

676, W



009195-00410VS

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUNE 07, 2004

PTAS

TOWNSEND AND TOWNSEND AND CREW LLP
GERALD T. GRAY
TWO EMBARCADERO CENTER, EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834



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RECORDATION DATE: 11/17/2003

REEL/FRAME: 014695/0952
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

TANG, HONGXING

DOC DATE: 10/17/2003

ASSIGNOR:

ROUKES, MICHAEL L.

DOC DATE: 10/17/2003

ASSIGNEE:

CALIFORNIA INSTITUTE OF TECHNOLOGY
1201 EAST CALIFORNIA BLVD
MAIL CODE 305-6
PASADENA, CALIFORNIA 91125

SERIAL NUMBER: 10602537

FILING DATE: 06/23/2003

PATENT NUMBER:

ISSUE DATE:

TITLE: GIANT PLANAR HALL EFFECT IN EPITAXIAL FERROMAGNETIC SEMICONDUCTOR DEVICES

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06/15/04

014695/0952 PAGE 2

THERESA FREDERICK, EXAMINER
ASSIGNMENT DIVISION
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11-19-2003

Attorney Docket No. 009195-000410US

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(Rev. 10-02)

OMB No. 0851-0027 (exp. 3/31/2002)

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Sheet

U.S. Department of Commerce
U.S. Patent and Trademark Office

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1. Name of conveying party(ies):

Hongxing Tang
Michael L. RoukesAdditional name(s) of conveying party(ies) attached? ☐ Yes ☒ No.

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
- ☐ Security Agreement ☐ Change of Name
- ☐ Other:

Execution Date: 10/17/03

2. Name and address of receiving party(ies)

Name: California Institute of Technology

Internal Address: Mail Code 305-6

Street Address: 1201 East California Blvd

City: Pasadena

State: CA

ZIP: 91125

Additional name(s) and address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No(s): 10/602,537

B. Patent No(s):

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Gerald T. Gray
TOWNSEND AND TOWNSEND AND CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
(415) 576-02006. Total number of applications and patents involved CP

7. Total fee (37 CFR 3.41): -----\$40.00

☐ Enclosed☒ Authorized to be charged to deposit account8. Deposit account number: 20-1430

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Gerald T. Gray

Name of Person Signing
Atty. Reg. No. 411797Gerald T. Gray
SignatureNovember 12, 2003
DateTotal number of pages including cover sheet, attachments and documents: 4

Mail documents to be recorded with required cover sheet information to:

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Director of the U.S. Patent and Trademark Office
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11/18/2003 LNUELLER 00000064 201430 10602537

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Attorney Docket No.: 009195-000410US

Client Reference No.: CIT-3713

ASSIGNMENT OF PATENT APPLICATION

JOINT

WHEREAS, Hongxing Tang of 195 S. Wilson Avenue, #11, Pasadena, CA 91106; Michael L. Roukes of 1420 San Pasqual, Pasadena, CA 91106 hereinafter referred to as "Assignors," are inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: GIANT PLANAR HALL EFFECT IN EPITAXIAL
FERROMAGNETIC SEMICONDUCTOR
DEVICES

Date(s) of execution of Declaration:

Filing Date: June 23, 2003

Application No.: 10/602,537; and

WHEREAS, California Institute of Technology, located at California Institute of Technology, 1201 East California Blvd., Mail Code 305-6, Pasadena, CA 91125, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignee, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

Assignment

Attorney Docket No.: 009195-000410US

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Assignors hereby authorize and request Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, CA 94111-3834, to insert herein above the application number and filing date of said application when known.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Dated:

10/17/03



Hongxing Tang

Dated:

10/17/03



Michael L. Roukes